MrRoboto

1 How to setup system

1.1 Initial computer settings

1. Install ubuntu 12.04 on your computer.
2. Install ROS GROOVY according to: *http://wiki.ros.org/groovy/Installation/Ubuntu*
3. Install git, type:
   $ sudo apt-get install git (in a terminal window)
   Password is *ubuntu* for the computer in the robot lab.
4. Clone the repository of the project. cd* into a folder where you want the folder containing the code. Type:
   $ git clone git@github.com:matni796/robot-security-tsbb11
   (*cd is a terminal command. If your not familiar with navigation in terminal, see *http://linuxcommand.org/lc3_lts0020.php*)
5. Source your own created packages in .bashrc: type: gedit /.bashrc add the line: source *wherever_path_you_put_repository/robotsecuritytsbb11/catkin_ws/src/devel/setup.bash*
6. Install freenect, type:
   $ sudo apt-get install ros-groovy-freenect-stack
   $ sudo apt-get install ros-groovy-freenect-launch
7. Disable gspca kernel according to: *http://openkinect.org/wiki/Getting_Started*
8. cd into the installed folder and into catkin_ws and type catkin_make to build.

1.2 Setup DX100 controller

1. Make sure the controller's version supports MotoPlus applications, should be a version ending with -14. Current version (20131206) is DS3.53.01A-14.
2. Load parameters. The file ALL.PRM can be found in git repo, under the folder robot/. Transfer it to a cf card or usb. Start the controller regularly. Go into management mode (see below). Then go to EX MEMORY → FOLDER, set folder where you put ALL.PRM. EX MEMORY → LOAD → PARAMETERS → BATCH PARAMETERS ALL.PRM

   You might need to do a safety reset of the flash device. This is done by starting up the controller in Maintenance mode. In Maintenance Mode, enter Management mode. INITIALIZE → system flash safety reset, might take a while, wait for beep (CHECK NAME). Shut off controller and restart it regularly.

   NOTE: Might change the setup of the controller. Should be done with caution. Contact Yaskawa if uncertain.
3. To install MotoPlus application, follow the tutorial on *http://wiki.ros.org/motoman_driver/Tutorials/In*

- For step 3 in tutorial, see PDF file *MotoPlus Application Installation* in folder *robot/*. Follow the instructions on step 2.1. The application file to be loaded is also in the in the *robot/* folder.

  NOTE: We have used an .out file hardcoded for a SIA20D robot. This version does not come with the motoman files from ROS.

- For step 4 in tutorial, transfer *INIT_ROS.JBI* to CF card or USB device. File can be found under *../catkin_ws/src/motoman/motoman_driver/Inform/DX100/*. Start the controller regularly. In menu, go to: Ex MEMORY → FOLDER move to the folder where you put *INIT_ROS.JBI* file. Then: Ex Memory → LOAD → job.

1.3 Setup interface between controller and computer.

Follow the instructions on *http://wiki.ros.org/motoman_driver/Tutorials/Usage*.

- On step 3, enter the controller IP **192.168.255.1**.
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